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Underrepresentation in Oncology: Identifying and Addressing Structural Barriers

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Key Words. Medical education • Cultural bias • Underrepresentation in medicine

Abstract

Underrepresentation of minority groups in the oncology physician workforce is a pressing issue that may contribute to disparities in cancer research, clinical care, and patient outcomes. To address this, we highlight the role of medical culture and institutions in perpetuating a range of barriers that lead to the persistent underrepresentation of minority medical trainees and physicians. These barriers include an exclusionary medical culture, bias in measures of merit, financial barriers to medical subspecialty training, underrecognition of achievement, and poor representation and satisfaction among underrepresented faculty. Furthermore, we suggest a more intentional approach to diversity that values both recruitment of underrepresented undergraduates and early medical students and retention of internal medicine trainees, hematology-oncology fellows, and faculty. To counteract deeply embedded structural racism that hampers diversity efforts, this multifaceted approach will require cultural transformation of our medical institutions at all levels, including increased institutional transparency, mandatory evidence-based bias training, acknowledgment of varied achievements, changes in recruitment practices, and reinvigoration of pipeline development programs with a focus on financial support. Taken in combination, programs should recognize the scope of deterrents to representation and develop program-specific, longitudinal interventions to promote more successful diversity initiatives within the field of oncology. ***The Oncologist*** 2021;26:630–634

Implications for Practice: The medical profession recognizes the value of physician workforce diversity in improving the quality of both medical education and patient care. In return, medical schools and training programs invest in recruitment programs focused on candidates who are underrepresented in medicine. In the field of oncology, where stark racial and ethnic disparities in care and health outcomes are well-defined, measures of minority physician representation remain especially stagnant. This study clearly defines the barriers that limit the effectiveness of such programs and provides recommendations to achieve the necessary workforce diversity in oncology.

Introduction

Although the medical field has long-since acknowledged the importance of diversity in the physician workforce, there has been slow action toward narrowing the existing gaps. In addition to cultural sensitivity and competency trainings, increasing diverse representation within the medical workforce is a key means to addressing health disparities by increasing access to health care and improving quality of physician-patient relationships [1]. Health disparities across race, gender, and socioeconomic status pervade all the subspecialties. Oncology, however, houses some of the most disparate health outcomes for racial minorities [2]. After adjusting for sex, age, and stage at diagnosis, the relative risk of death after a cancer diagnosis is 33% higher in Black patients and 51% higher in American Indian/Alaskan Natives than in White patients [2]. Another pressing challenge for the cancer research community is the disproportionately low enrollment of patients from racial and ethnic minority groups in cancer clinical trials [3]. In addition to alleviating these health disparities, increasing representation also serves to improve medical education, establish trust with

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Table 1. Barriers to workforce diversity in oncology

Myth of medical meritocracy, based on measures subject to implicit bias
False assumption that qualified minority candidates do not exist
Racial prejudice and discrimination
Financial barriers to medical subspecialty training
Undervaluing of minority health research
Poor representation and retention of minority faculty and leaders

minority communities, address a history of discrimination and exclusion, and promote equity in opportunity [4].

Attempting to rectify this underrepresentation, the Liaison Committee on Medical Education implemented two diversity accreditation standards in 2009 aimed at recruiting and retaining a diverse medical student body [5]. However, although the U.S. population continues to become more diverse, underrepresentation of racial minorities, gender minorities, and low socioeconomic status individuals in medicine persists [6, 7]. By 2014, the numbers of Black male applicants and matriculants to medical school had not exceeded the 1978 numbers [8]. Poor representation overall is especially striking at the faculty level with Black, Hispanic/Latinx, and American Indian/Alaskan Native physicians accounting for only 11.2% of full-time U.S. medical school faculty despite their respective race/ethnicities accounting for at least 33.2% of the U.S. population [7, 9]. Furthermore, in oncology these underrepresented in medicine (UiM) groups account for 7.8% of U.S. practicing physicians and 5.7% of faculty [10]. Despite stated commitments to diversity work on a national level, gross underrepresentation persists in the oncology workforce. To meaningfully shift these statistics, a more intentional and comprehensive approach is needed.

Barriers

To contextualize prior shortcomings, it is important to understand the foundational barriers to proportionate representation of minorities across the professional continuum, from medical school to practice (Table 1). A critical part of this discussion is structural racism entrenched by a myth of medical meritocracy [11]. This myth supports an inherently subjective and exclusionary process of assigning absolute merit to certain accomplishments over others. If merit criteria are subject to implicit biases and consistently reinforce exclusion, then it is important to re-evaluate these measures of merit and the culture that they perpetuate [11]. As an example, several studies have shown that racial and gender minorities are far less likely to receive awards such as National Institutes of Health research grants and medical society recognition than their White male counterparts [12, 13]. Often the work of addressing health care disparities and community efforts that UiM groups may lean toward are undervalued as measures of academic accomplishment. As promotions and selective opportunities often use research grants and awards of recognition as metrics of success, bias here inevitably contributes to disparate racial/ethnic and gender representation among faculty [7, 14, 15].

The frequent assumption that there are not enough qualified minority candidates further perpetuates underrepresentation and exclusionary processes that dwindle UiM interest [16]. Additionally, this assumption serves to amplify self-doubt amongst UiM trainees and yields improper acknowledgment of progress and potential. Minority medical students report higher burnout and depressive symptoms than nonminority students, which they attribute to experiences of explicit racial prejudice, discrimination, and social isolation [17]. Therefore, the noninclusive medical culture must first be addressed in order to reveal the many interested, qualified candidates and see a more substantial benefit from recruitment efforts.

Contributing to the underrepresentation of racial minorities in medicine are financial barriers to pursuing medical education. These barriers result in the observed overrepresentation of students from families with high socioeconomic status. In 2017, 77% of medical students came from families in the top two quintiles of U.S. household income [18]. Combined with the reality that income inequalities have led UiM populations to be overrepresented at lower income levels, this serves as a compounded barrier to representation [19]. Programs should take note of cost-prohibitive barriers to becoming a competitive medical subspecialty applicant: from the early stages of accessing and completing undergraduate and medical education (e.g., MCAT preparation, medical school application fees, and travel for interviews) to unpaid research training. Still, even above socioeconomic background, minority race of a physician is the strongest independent predictor of serving the underserved [20]. Thus, efforts should be made to recruit and retain racial minority students from where they are; present within all income levels, but also overrepresented and undersupported in the lower quintiles of U.S. household income.

Underrepresentation of racial/ethnic and gender minorities in leadership positions hinders the development of a positive and inclusive medical culture. Poor representation at the faculty level limits the breadth of role models for UiM trainees, and lack of recognition may lead to higher rates of attrition [21]. Many efforts tend to focus on leadership and professional development as ways to boost these numbers. Although these investments benefit individuals, these efforts fail to address institutional factors that limit diversification. UiM trainees and faculty often do not have the same level of formal mentorship as their non-UiM peers. This can contribute to feelings of less support and the exacerbation of disparities in career advancement [22]. Additionally, the lack of formal sponsors (individuals with the requisite status to recommend trainees and faculty for high-visibility, career-advancing opportunities) ultimately hinders growth within the field [23].

Undervaluing of retention efforts likely contributes to the "leaky" pipeline in academic medicine. Although UiM faculty members must satisfy the same criteria for appointment and promotion as their non-UiM colleagues, UiM faculty are also tasked with leading minority recruitment

efforts, community outreach, and educational programs. This critically important work often goes uncompensated and unrecognized, leading to decreased job satisfaction. Furthermore, students witnessing poor satisfaction of UiM residents, junior faculty, and senior faculty are actively discouraged from further pursuing careers in similar specialties or institutions [24].

Interventions

To overcome systemic barriers to adequate representation, medical institutions have to implement comprehensive interventions. Successful interventions will overcome the narrative that representation remains a personal development issue while also promoting equity in opportunities available to trainees and faculty at all levels (Table 2) [25]. To address the myth of meritocracy, there must first be cultural transformation. This begins with intentional implicit bias training that emphasizes awareness but is rooted in long-term behavioral change [26]. Long-term reductions in individual implicit bias rely on developing high internal motivations and using specific strategies such as individuation, perspective taking, and increasing contact with the "out" group [26, 27]. Much greater than addressing individual bias, however, is the need to create an environment that prevents bias from creating systematic exclusion. An organization that brushes off common encounters of racial discrimination fosters a culture of isolation and apathy toward structural racism. Cultural change requires that such encounters be addressed effectively and in real time. To achieve this, faculty, students, trainees, and other staff members in the clinical learning environment must be equipped with tools to respond when they encounter racial bias or discrimination [28].

Knowledge acquisition–based trainings (e.g., cultural sensitivity/competency, unconscious bias) have not been enough to change medical culture and tip the scales of representation. These trainings often omit critical introspection, dissolution of harmful heuristics, and establishment of strategies in advocacy [29]. These tools are important for caring for diverse patients but also in supporting a diverse workforce.

Underrepresented faculty and trainees are often made to bear the labor of pushing forth diversity initiatives without appropriate compensation. Diversity, equity, and inclusion positions must be created and supported financially with attention to the expertise, interpersonal skills, and time needed to execute the role. However, the work of supporting such initiatives should be distributed to all faculty and trainees in a program, not only those from underrepresented backgrounds. This fosters an atmosphere of inclusion and establishes equitable representation as a shared goal.

A true commitment to equity in representation requires institutional transparency. Key stakeholders from minority groups must be allowed to analyze and critique institutional policies and practices that promote or sustain inequity. As a form of social accountability, departments should publicly report faculty, staff, and trainee demographics with regard to rank and salary [30]. This might be considered a radical change for many institutions. However, such transparency could improve retention by empowering minority faculty to demand fair compensation, aid in recruitment efforts by highlighting equity in promotion and compensation, and allow for meaningful assessment of diversity initiatives.

Table 2. Interventions to correct underrepresentation in oncology

Implicit bias and discriminatory encounter response training
Creation of and support for diversity leadership positions
Institutional transparency on compensation and rank by gender, race, and ethnicity
Public display of institutional commitments to equity and diversity
Adoption of bias-reducing recruitment practices (e.g., structured interview guides)
Retention-oriented programming
Pipeline development and outreach

Cultivating a culture of inclusion requires clear communication around institutional values. Training programs need to make visible their commitments and report tangible efforts toward advancing diversity, inclusion, and equity through public-facing Web sites and social media. These materials should present to prospective trainees an environment that is conducive to their professional growth and personal job satisfaction, an aspect rated to be highly important to ethnic minority trainees [31].

Recruitment initiatives must be reserved until programming has been put in place to cultivate an inclusive environment where diverse faculty and trainees can thrive. Retention-oriented programming should thus focus on increasing access to mentorship and sponsorship for UiM trainees and faculty as well as ensuring equity in acknowledgment and promotion. Additionally, funding research and professional development opportunities for UiM students, residents, and faculty can help demonstrate institutional commitment to equity.

The process of recruitment brings to the forefront a program's priorities and central mission. Candidates should be evaluated for qualities that enhance this mission using a genuine holistic review process. This should consider how certain experiences and attributes of a candidate may contribute toward realizing the program's long-term goals [32, 33]. During an interview, use of structured guides have been shown to mitigate the effect of unconscious biases. Interviewers should be trained in use of these mission-derived structured interview guides to assess candidates' essential qualities [34].

Many programs use outreach and pipeline programming to instill early interest and encourage follow through. Efforts to recruit UiM applicants must begin earlier than expected. Trainees may begin to develop strong inclinations toward subspecialties well before residency. As such, oncology recruitment should seek to engage undergraduate and early medical students. Although programs like these will serve to strengthen self-efficacy beliefs and confidence within the field, they also signify authentic support. Programs can instill early interest in UiM students by actively working to develop connections with their previously

established support networks. Future and current trainees across all levels can be sought out at minority research conferences. Medical students can be engaged by working with affinity organizations with national and local chapters such as the Student National Medical Association and the Latino Medical Student Association. In addition, programs can nurture budding interest by recruiting during racial and gender minority programming at national oncology conferences and providing scholarships for UiM trainees to officially visit the program. On top of this funding for initial programming and events, outreach programs also require expanded support of trainees through the application process.

Conclusion

For decades, medical institutions have worked to address underrepresentation in medicine as a whole and within various specialties by establishing recruitment programs for UiM trainees. However, persistent underrepresentation shows that these initiatives have not produced the desired results. In pursuing solutions, it is crucial that programs understand the barriers that exist at all levels of training and career. Although much focus remains on generating specialty interest in UiM trainees, efforts to build an enduring support structure to encourage growth and success within the field are often overlooked. Longitudinal support is the foundation needed to build a more diverse workforce in oncology.

Essential to this work will be confronting exclusionary cultures within medicine that prevent not only equitable recruitment of UiM students but also equitable career advancement of the UiM trainees and faculty already striving for success within the field. Specifically, these barriers include an underdeveloped culture of inclusion, bias in measures of merit, underrecognition of achievement, poor representation among faculty, and financial barriers to medical subspecialty training. Longitudinal interventions that address the range of diversity recruitment and retention efforts from early student days to satisfaction among senior faculty will make the most impact in the field of oncology and the practice of medicine.

Author Contributions

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Disclosures

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For Further Reading:
Shruti R. Patel, Frederique St. Pierre, Ana I. Velazquez et al. The Matilda Effect: Underrecognition of Women in Hematology and Oncology Awards. ***The Oncologist*** First published: 22 June 2021.

Implications for Practice:
In this study, women and minority groups were found to be underrepresented amongst award recipients. Significant disparities were seen in disciplines that have been historically male predominant, such as basic sciences. As awards on an international level enhance academic resumes and assist with career advancement, it is important that awards are being given in an equitable manner. First steps to promote diversity and inclusion in academic medicine is reporting of gender and racial disparities in various areas of academia.